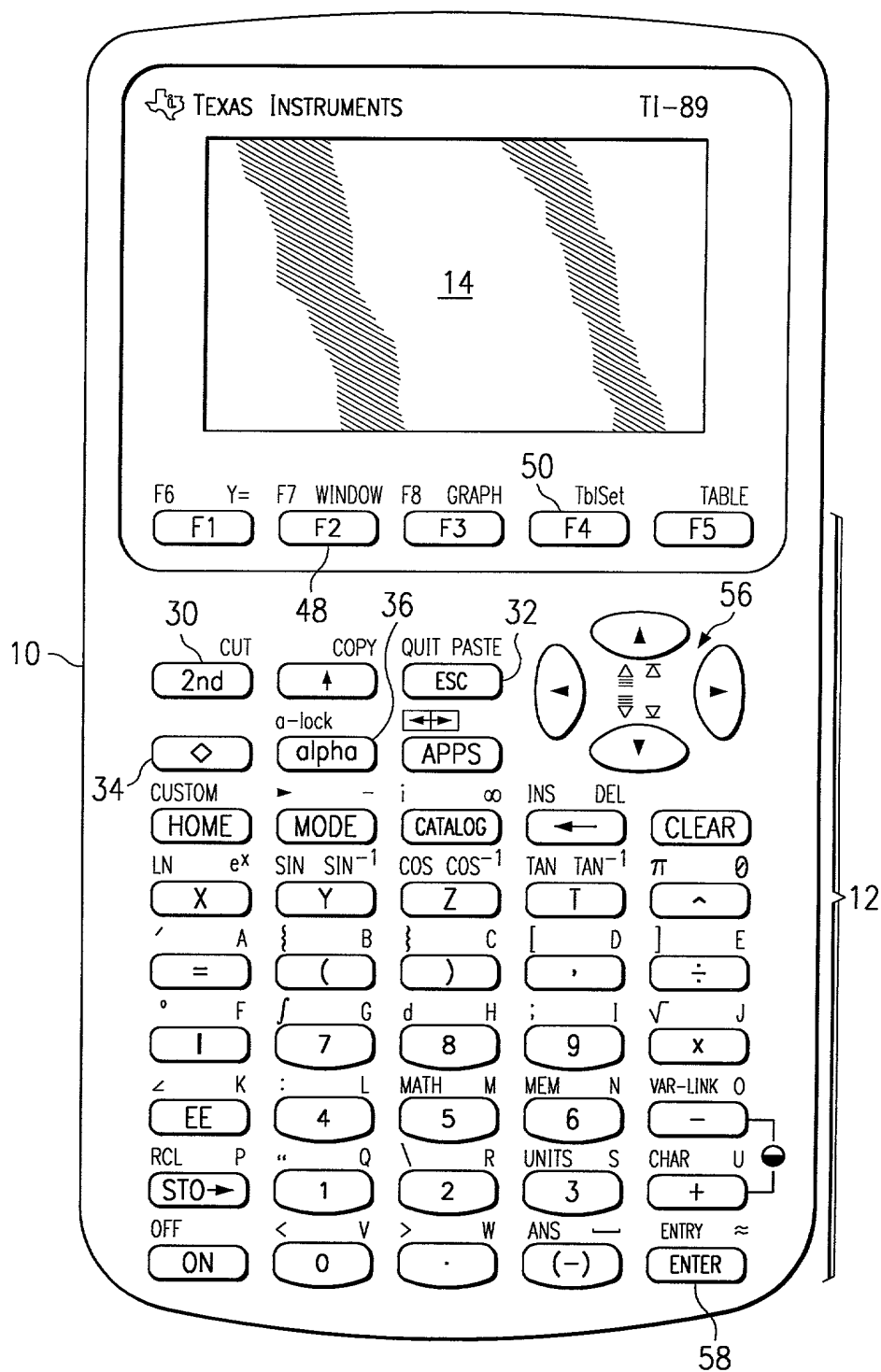
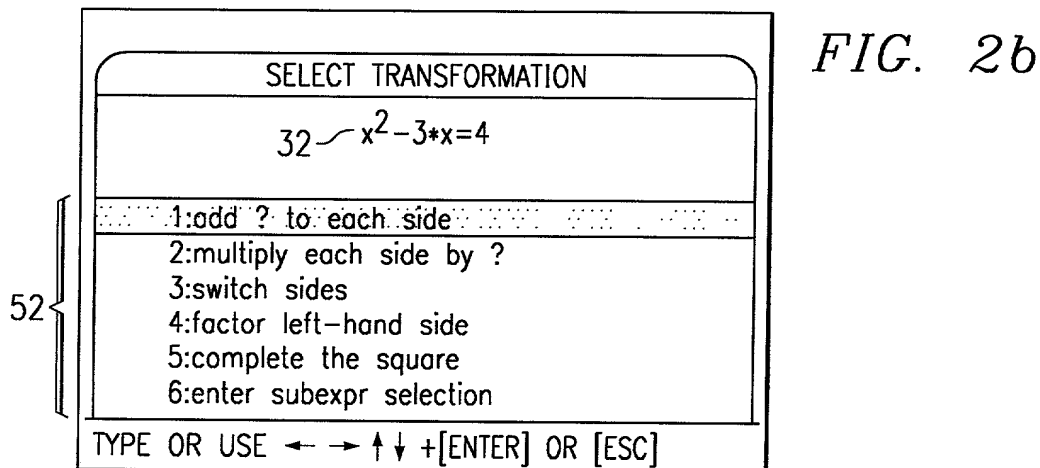
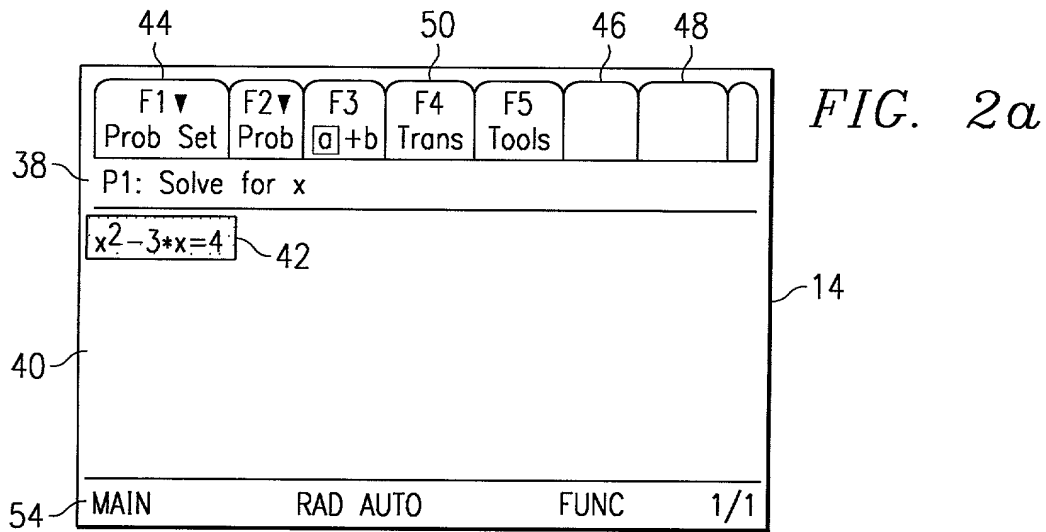
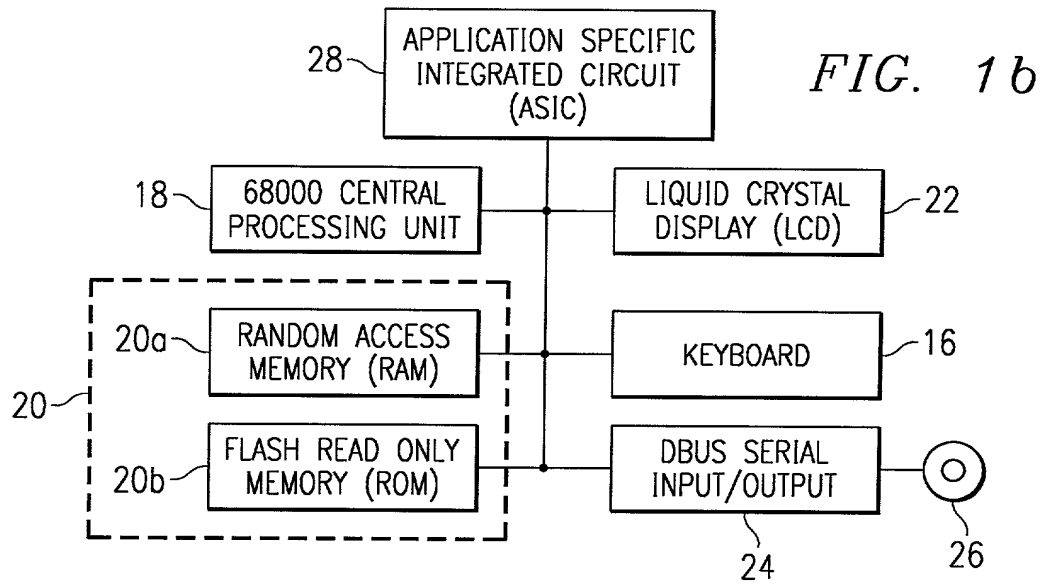


#3

FIG. 1a



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FIG. 2c

F1▼ Prob Set	F2▼ Prob	F3 [a] + b	F4 Trans	F5 Tools			
-----------------	-------------	---------------	-------------	-------------	--	--	--

P1: Solve for x

add ? to each side

$x^2 - 3x = 4$

60

? = -4

Enter=OK
ESC=CANCEL

MAIN	RAD AUTO	FUNC 1/1
------	----------	----------

FIG. 2d

F1▼ Prob Set	F2▼ Prob	F3 [a] + b	F4 Trans	F5 Tools			
-----------------	-------------	---------------	-------------	-------------	--	--	--

P1: Solve for x

$x^2 - 3x = 4$   
 ► add -4 to each side  
 Press <ENTER>

MAIN	RAD AUTO	FUNC PAUSE
------	----------	------------

FIG. 2e

F1▼ Prob Set	F2▼ Prob	F3 [a] + b	F4 Trans	F5 Tools			
-----------------	-------------	---------------	-------------	-------------	--	--	--

P1: Solve for x

$x^2 - 3x = 4$   
 ► add -4 to each side  
 $x^2 - 3x + -4 = 4 + -4$

MAIN	RAD AUTO	FUNC 1/1
------	----------	----------

FIG. 2f

F1▼ Prob Set	F2▼ Prob	F3 <input type="text" value="a"/> +b	F4 Trans	F5 Tools			
-----------------	-------------	---	-------------	-------------	--	--	--

$$x^2 - 3x = 4$$
$$x^2 - 3x + -4 = 4 + -4$$

Press <ENTER>

PAUSE

F1▼	F2▼	F3	F4	F5			
Prob Set	Prob	a + b	Trans	Tools			

---

P1: Solve for x

---

$x^2 - 3x = 4$

► add -4 to each side

$x^2 - 3x + -4 = 4 + -4$

► simplify

$x^2 - 3x - 4 = 0$

---

MAIN	RAD AUTO	FUNC 1/1
------	----------	----------

F2▼  
Prob

$$\overbrace{F3} \\ \boxed{a} + b$$

F4  
Trans

F5  
Tools

$$x^2 - 3x = 4$$
$$x^2 - 3x + -4 = 4 + -4$$
$$x^2 - 3x - 4 = 0$$

1/1

SELECT TRANSFORMATION		
$x^2 - 3x - 4 = 0$		
1: add ? to each side		
2: multiply each side by ?		
3: switch sides		
4: factor left-hand side		
5: quadratic formula		
6: enter subexpr selection		
MAIN	RAD AUTO	FUNC 1/1

$$x^2 - 3x - 4 = 0$$

2: multiply each side by ?

4:factor left-hand side . . . . .

```
6:enter subexpr selection
```

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FIG. 2i

F1▼ Prob Set	F2▼ Prob	F3 [a] + b	F4 Trans	F5 Tools			
-----------------	-------------	---------------	-------------	-------------	--	--	--

P1: Solve for x

---


$$x^2 - 3x + 4 = 4 - 4$$

► simplify

$$x^2 - 3x - 4 = 0$$

► factor left-hand side

$(x-4)*(x+1)=0$

---

MAIN	RAD AUTO	FUNC 1/1
------	----------	----------

FIG. 2j

SELECT TRANSFORMATION	
$(x-4)*(x+1)=0$	
1: add ? to each side	
2: multiply each side by ?	
3: switch sides	
4: $A*B=0 \rightarrow A=0$ or $B=0$	
5: distribute multiplication	
6: $(A \pm B)*C \rightarrow A*C \pm B*C$	
7: $A*(B \pm C) \rightarrow A*B \pm A*C$	

---

MAIN	RAD AUTO	FUNC 1/1
------	----------	----------

FIG. 2k

F1▼ Prob Set	F2▼ Prob	F3 [a] + b	F4 Trans	F5 Tools			
-----------------	-------------	---------------	-------------	-------------	--	--	--

P1: Solve for x

---


$$x^2 - 3x - 4 = 0$$

► factor left-hand side

$$(x-4)*(x+1)=0$$

►  $A*B=0 \rightarrow A=0$  or  $B=0$

$x-4=0$  or  $x+1=0$

---

MAIN	RAD AUTO	FUNC 1/1
------	----------	----------

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FIG. 2l

SELECT TRANSFORMATION	
$x-4=0$ or $x+1=0$	
1:	solve linear equation
2:	enter subexpr selection
TYPE OR USE ← → ↑ ↓ +[ENTER] OR [ESC]	

FIG. 2m

F1▼ Prob Set	F2▼ Prob	F3 [a]+b	F4 Trans	F5 Tools			
P1: Solve for x							
$(x-4)*(x+1)=0$							
► $A*B=0 \rightarrow A=0$ or $B=0$							
$x-4=0$ or $x+1=0$							
► solve linear equation							
$x=4$ or $x=-1$							
MAIN		RAD AUTO		FUNC		1/1	

FIG. 2n

F1▼ Prob Set	F2▼ Prob	F3 [a]+b	F4 Trans	F5 Tools			
P1: Solve for x							
$x^2-3*x-4=0$							
► quadratic formula							
$x = \frac{-(-3) \pm \sqrt{(-3)^2 - 4*1*-4}}{2*1}$ or ►							
MAIN		RAD AUTO		FUNC		1/1	

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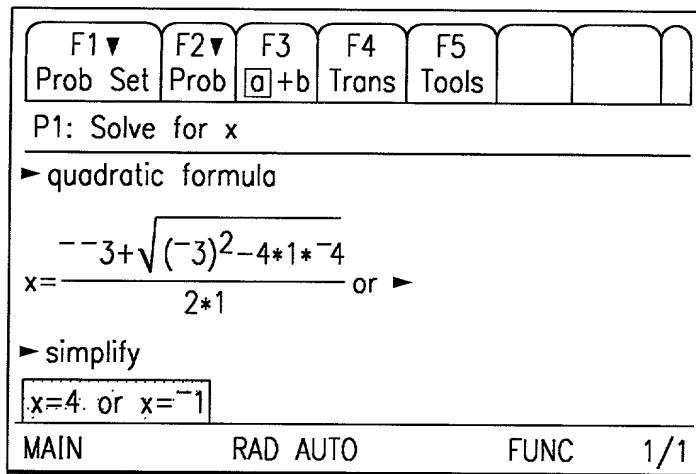


FIG. 3a

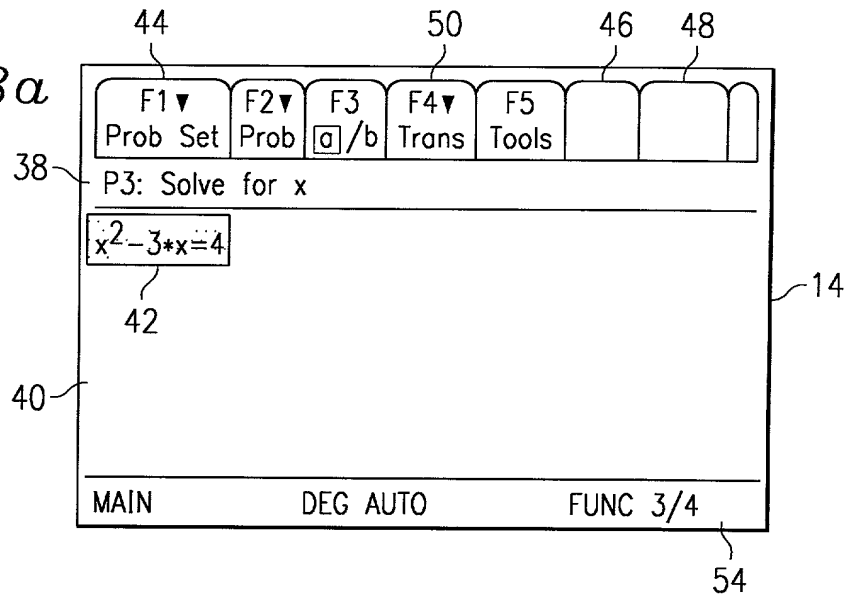
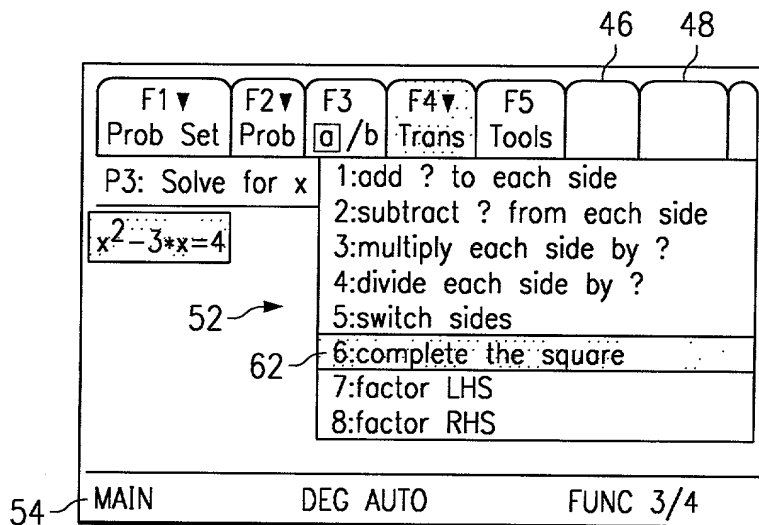


FIG. 3b



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FIG. 3c

F1▼ Prob Set	F2▼ Prob	F3 a/b	F4▼ Trans	F5 Tools			
P3: Solve for x							
$x^2 - 3x = 4$ ► complete the square ~ 64							
$x^2 - 3x + \left(\frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$ ~ 66							
MAIN		DEG AUTO		FUNC 3/4			

FIG. 3d

F1▼ Prob Set	F2▼ Prob	F3 a/b	F4▼ Trans	F5 Tools			
P3: Solve for x							
$x^2 - 3x = 4$ ► complete the square							
$x^2 - 3x + \left(\frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$ ~ 68							
USE ←, →, ↓, ↑ Shift ←, Shift →, ESC, F3, F4, F7							

FIG. 3e

F1▼ Prob Set	F2▼ Prob	F3 a/b	F4▼ Trans	F5 Tools			
P3: Solve for x			1: $A^2 \pm 2AB + B^2 \rightarrow (A \pm B)^2$				
$x^2 - 3x = 4$ ► complete the square			2: factor				
$x^2 - 3x + \left(\frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$			3: simplify				
			4: arithmetic				
			5: $(A/B)^C \rightarrow A^C/B^C$				
TYPE OR USE ← → ↑ ↓ + [ENTER] = OK AND [ESC] = CANCEL							



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FIG. 3f

F1▼ Prob Set	F2▼ Prob	F3 a/b	F4▼ Trans	F5 Tools			
P3: Solve for x							
► complete the square							
$x^2 - 3x + \left(\frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$							
► $A^2 \pm 2AB + B^2 \rightarrow (A \pm B)^2$							
$\left(x - \frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$							
MAIN		DEG AUTO		FUNC 3/4			

FIG. 3g

F1▼ Prob Set	F2▼ Prob	F3 a/b	F4▼ Trans	F5 Tools			
P3: Solve for x							
► complete the square							
$x^2 - 3x + \left(\frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$							
► $A^2 \pm 2AB + B^2 \rightarrow (A \pm B)^2$							
$\left(x - \frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$							
MAIN		DEG AUTO		FUNC 3/4			

FIG. 3h

F1▼ Prob Set	F2▼ Prob	F3 a/b	F4▼ Trans	F5 Tools			
P3: Solve for x				<div style="border: 1px solid black; padding: 2px;"> 1:A+B=B+A  2:factor  3:simplify  4:order terms  5:arithmetic  6: (A/B)^C → A^C/B^C </div>			
► complete the square							
$x^2 - 3x + \left(\frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$							
► $A^2 \pm 2AB + B^2 \rightarrow (A \pm B)^2$							
$\left(x - \frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$							
MAIN		DEG AUTO		FUNC 3/4			

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FIG. 3i

F1▼ Prob Set	F2▼ Prob	F3 [a]/b	F4▼ Trans	F5 Tools			
P3: Solve for x							
► $A^2 \pm 2AB + B^2 \rightarrow (A \pm B)^2$							
$\left(x - \frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$							
► arithmetic							
$\left(x - \frac{3}{2}\right)^2 = \frac{25}{4}$							
MAIN		DEG AUTO			FUNC 3/4		

FIG. 3j

F1▼ Prob Set	F2▼ Prob	F3 [a]/b	F4▼ Trans	F5 Tools			
P3: Solve for x				1: add ? to each side			
► $A^2 \pm 2AB + B^2 \rightarrow$				2: subtract ? from each side			
$\left(x - \frac{3}{2}\right)^2 = 4 + \left(\frac{3}{2}\right)^2$				3: multiply each side by ?			
				4: divide each side by ?			
► arithmetic				5: switch sides			
$\left(x - \frac{3}{2}\right)^2 = \frac{25}{4}$				6: $A^2 = B \rightarrow A = \sqrt{B}$ or $A = -\sqrt{B}$			
				7: expand			
				8: $(A \pm B)^2 \rightarrow A^2 \pm 2AB + B^2$			
MAIN		DEG AUTO			FUNC 3/4		

FIG. 3k

F1▼ Prob Set	F2▼ Prob	F3 [a]/b	F4▼ Trans	F5 Tools			
P3: Solve for x							
► arithmetic							
$\left(x - \frac{3}{2}\right)^2 = \frac{25}{4}$							
► $A^2 = B \rightarrow A = \sqrt{B}$ or $A = -\sqrt{B}$							
$x - \frac{3}{2} = \sqrt{\frac{25}{4}} \text{ or } x - \frac{3}{2} = -\sqrt{\frac{25}{4}}$							
MAIN		DEG AUTO			FUNC 3/4		

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FIG. 3l

F1▼ Prob Set	F2▼ Prob	F3 [a]/b	F4▼ Trans	F5 Tools			
P3: Solve for x		1:solve linear equation 2:√(A) → A^(1/2) 3:distribute √ 4:√(A/B) → √(A)/√(B) 5:√(A/B) → √( A )/√( B ) 6:evaluate √					
► arithmetic $\left(x - \frac{3}{2}\right)^2 = \frac{25}{4}$ ► A^2=B → A=√B							
$x - \frac{3}{2} = \sqrt{\frac{25}{4}}$ or $x - \frac{3}{2} = -\sqrt{\frac{25}{4}}$							
MAIN		DEG AUTO		FUNC 3/4			

FIG. 3m

F1▼ Prob Set	F2▼ Prob	F3 [a]/b	F4▼ Trans	F5 Tools			
P3: Solve for x							
► A^2=B → A=√B or A=-√B $x - \frac{3}{2} = \sqrt{\frac{25}{4}}$ or $x - \frac{3}{2} = -\sqrt{\frac{25}{4}}$ ► evaluate √							
$x - \frac{3}{2} = \frac{5}{2}$ or $x - \frac{3}{2} = -\frac{5}{2}$							
MAIN		DEG AUTO		FUNC 3/4			

FIG. 3n

F1▼ Prob Set	F2▼ Prob	F3 [a]/b	F4▼ Trans	F5 Tools			
P3: Solve for x		1:solve linear equation					
► A^2=B → A=√B or A=-√B $x - \frac{3}{2} = \sqrt{\frac{25}{4}}$ or $x - \frac{3}{2} = -\sqrt{\frac{25}{4}}$ ► evaluate √							
$x - \frac{3}{2} = \frac{5}{2}$ or $x - \frac{3}{2} = -\frac{5}{2}$							
TYPE OR USE ← → ↑ ↓ + [ENTER]=OK AND [ESC]=CANCEL							

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FIG. 30

F1▼ Prob Set	F2▼ Prob	F3 a/b	F4▼ Trans	F5 Tools			
-----------------	-------------	-----------	--------------	-------------	--	--	--

P3: Solve for x

---


$$x - \frac{3}{2} = \sqrt{\frac{25}{4}} \text{ or } x - \frac{3}{2} = -\sqrt{\frac{25}{4}}$$

► evaluate  $\sqrt{\phantom{x}}$

$$x - \frac{3}{2} = \frac{5}{2} \text{ or } x - \frac{3}{2} = -\frac{5}{2}$$

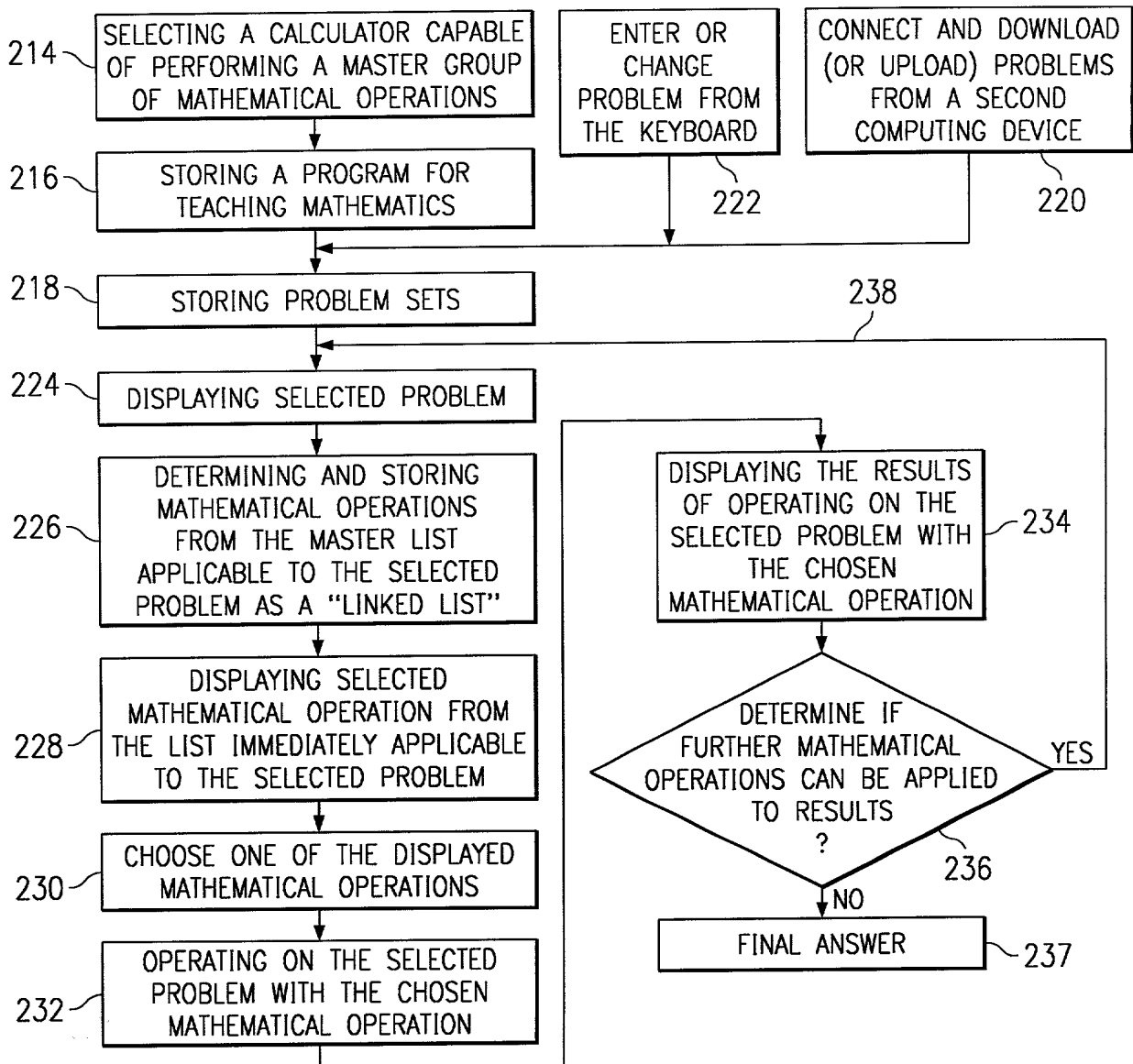
► solve linear equation

$x=4 \text{ or } x=-1$

---

MAIN	DEG AUTO	FUNC 3/4
------	----------	----------

FIG. 9



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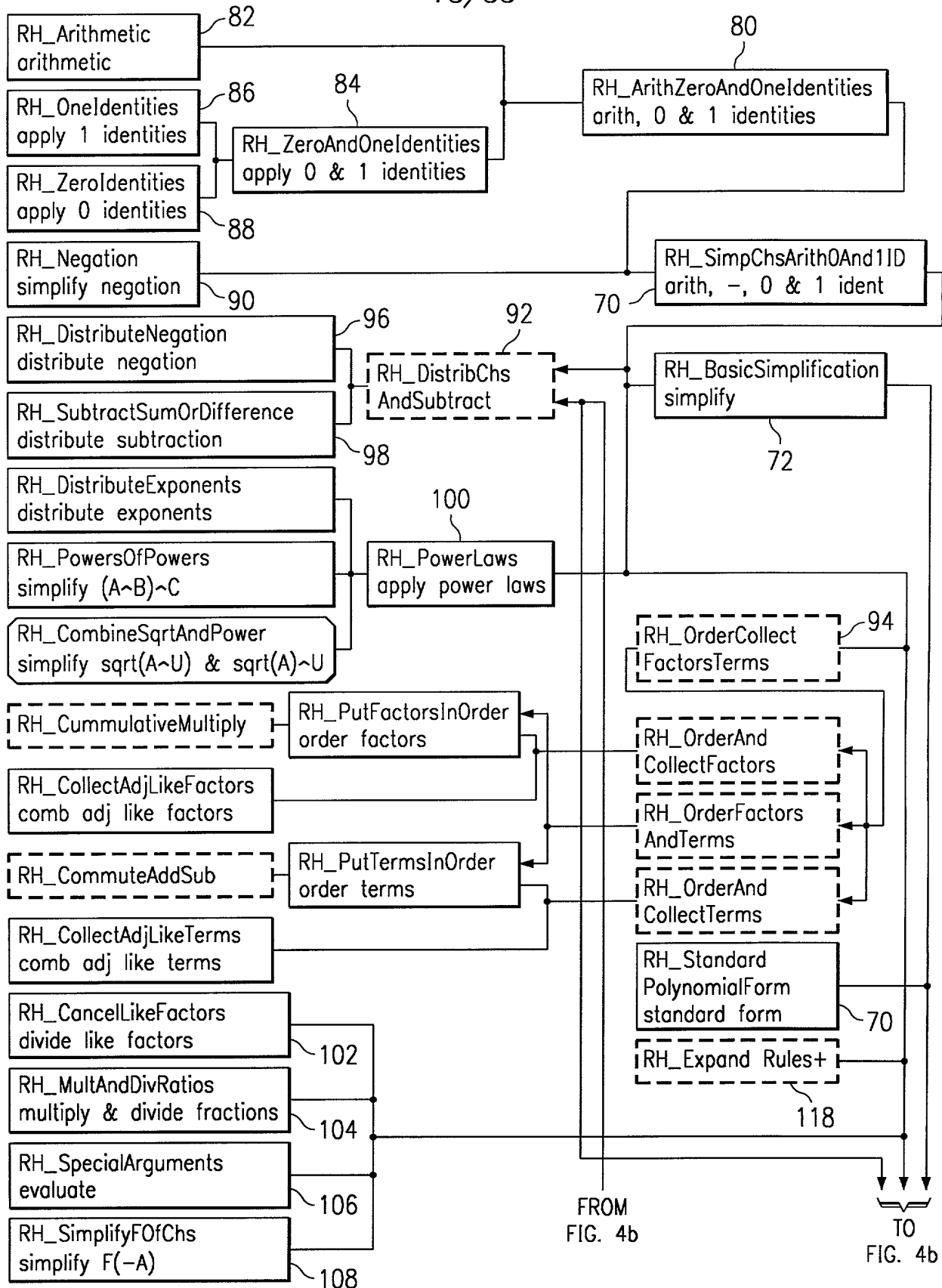


FIG. 4a

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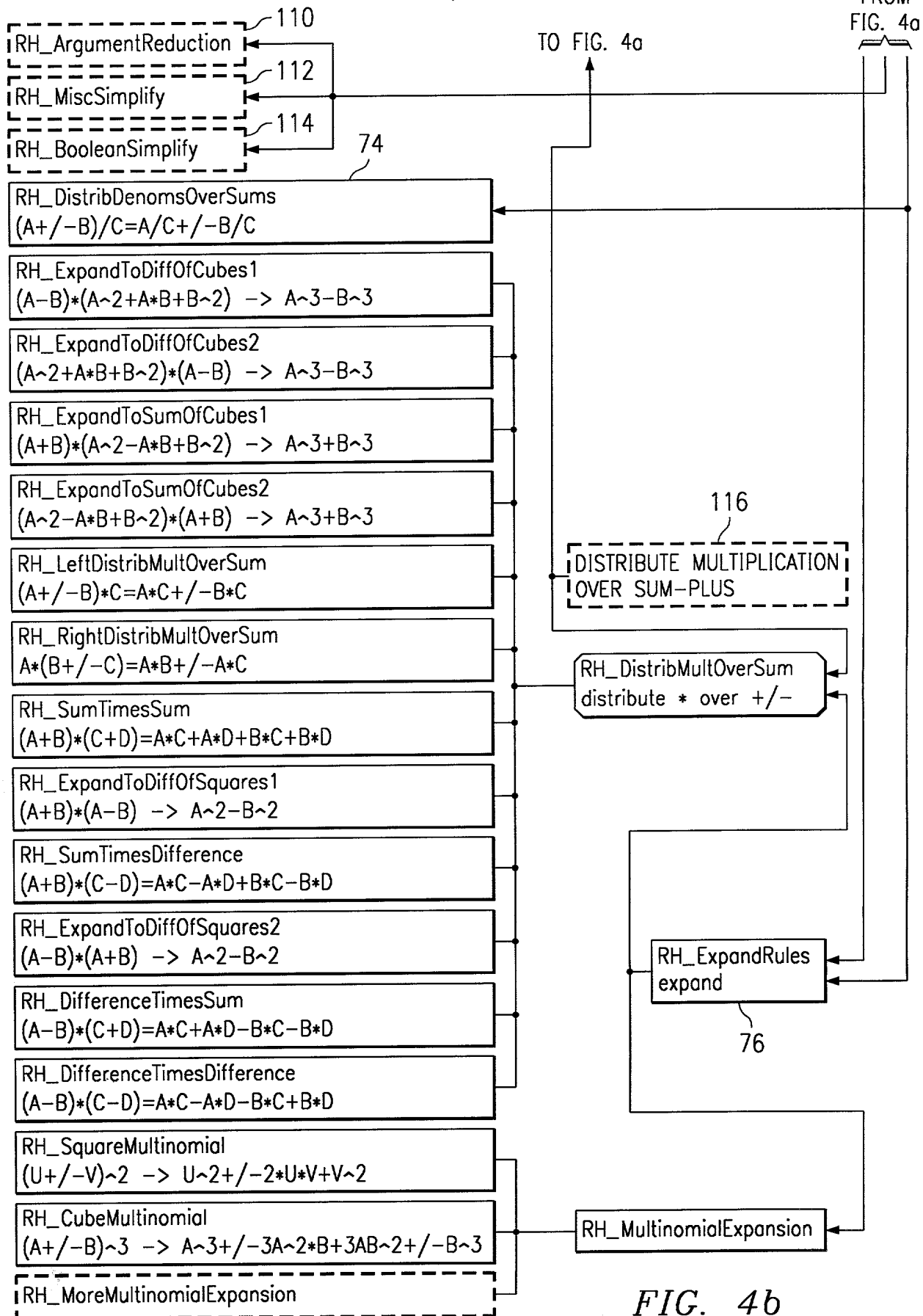


FIG. 4b

FIG. 4c

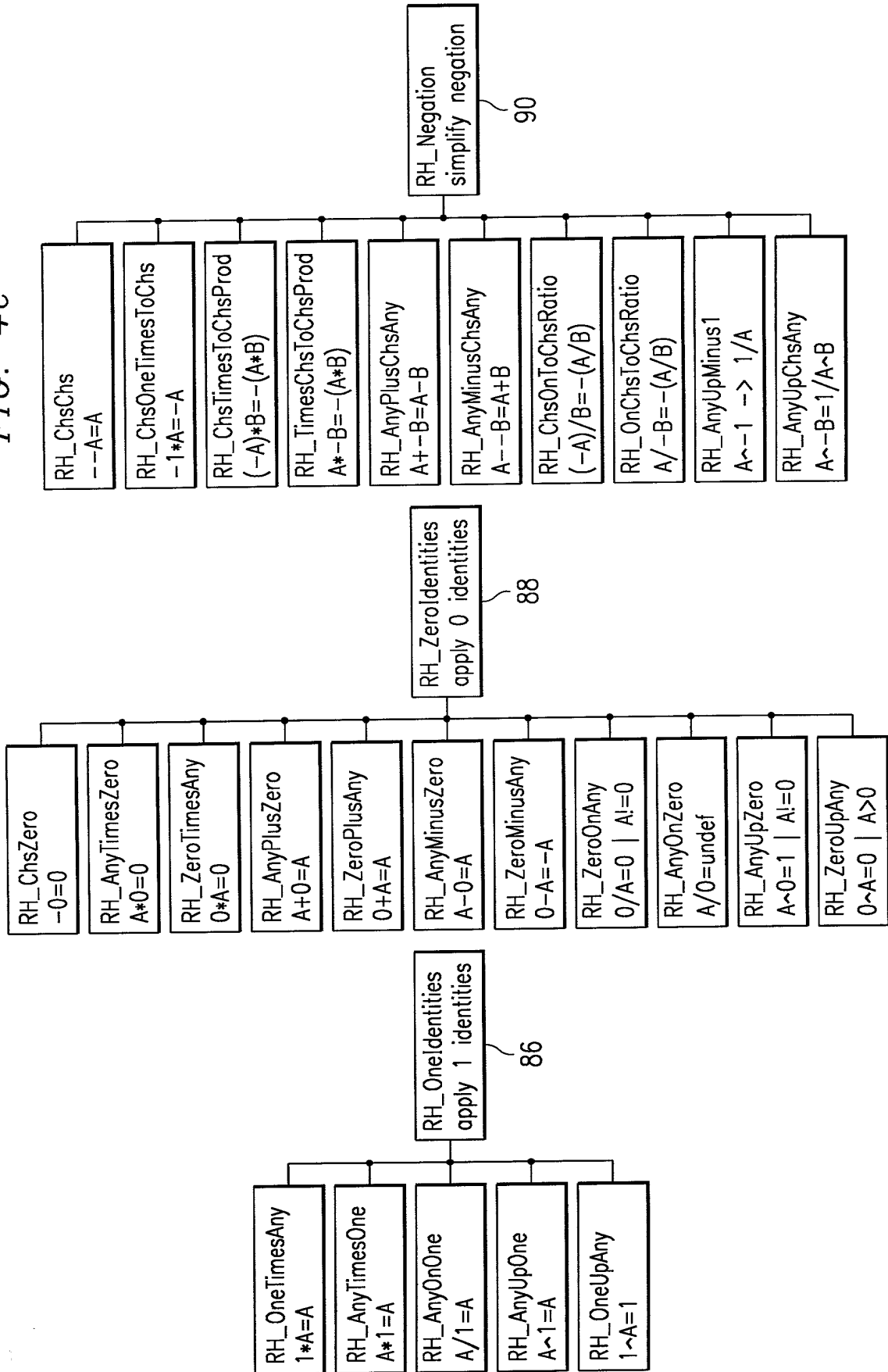


FIG. 4d

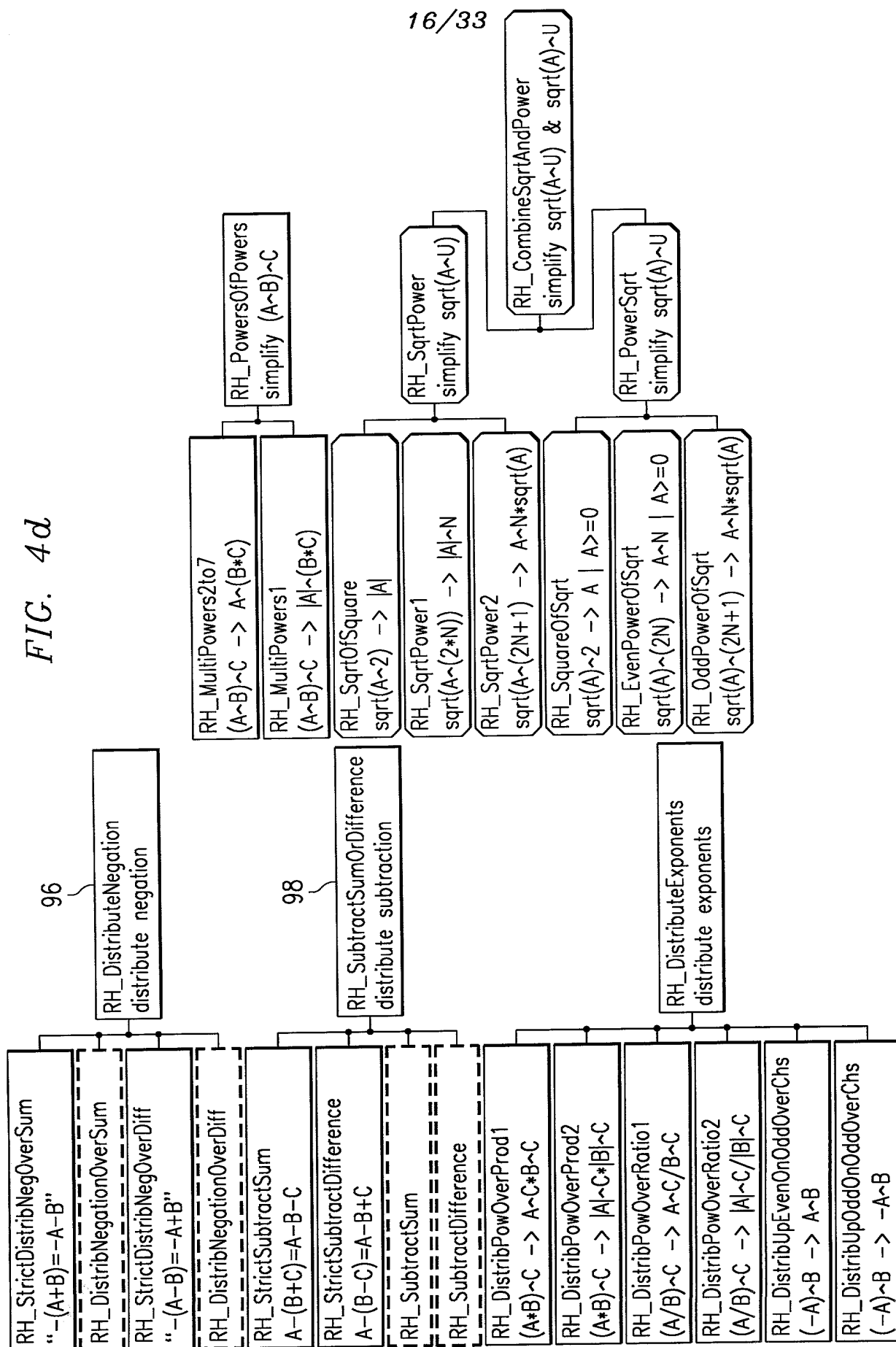




FIG. 4e

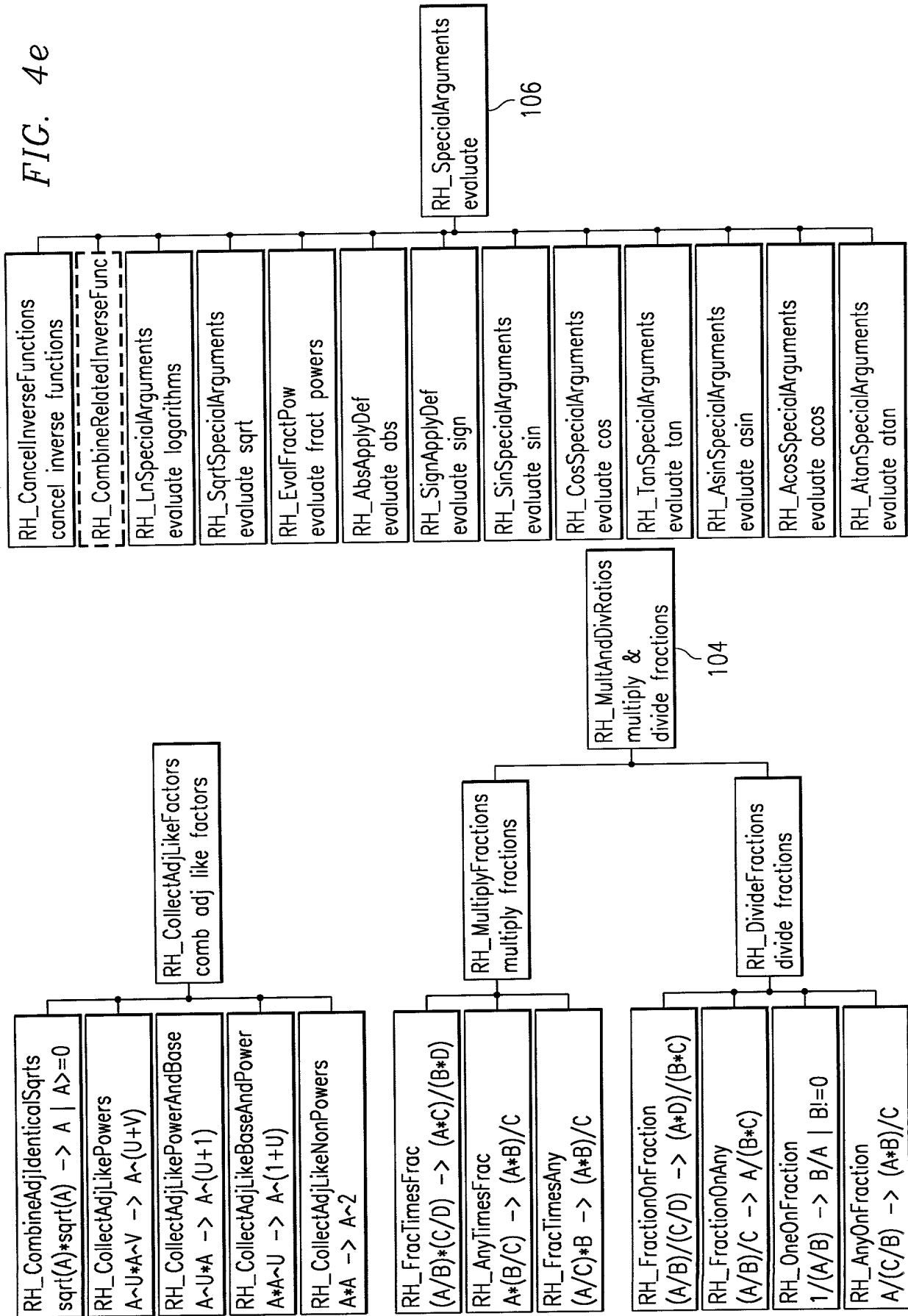
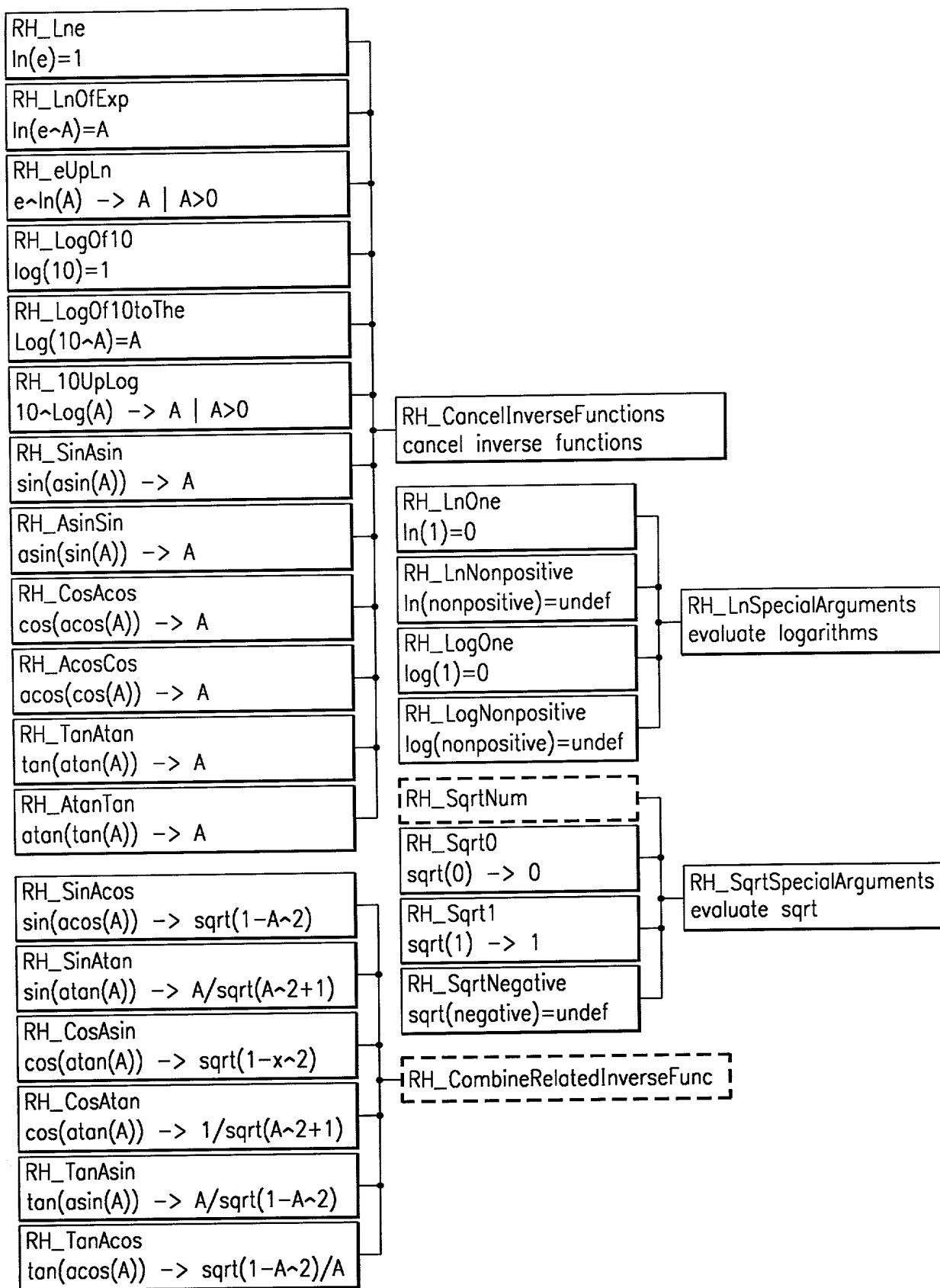
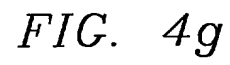


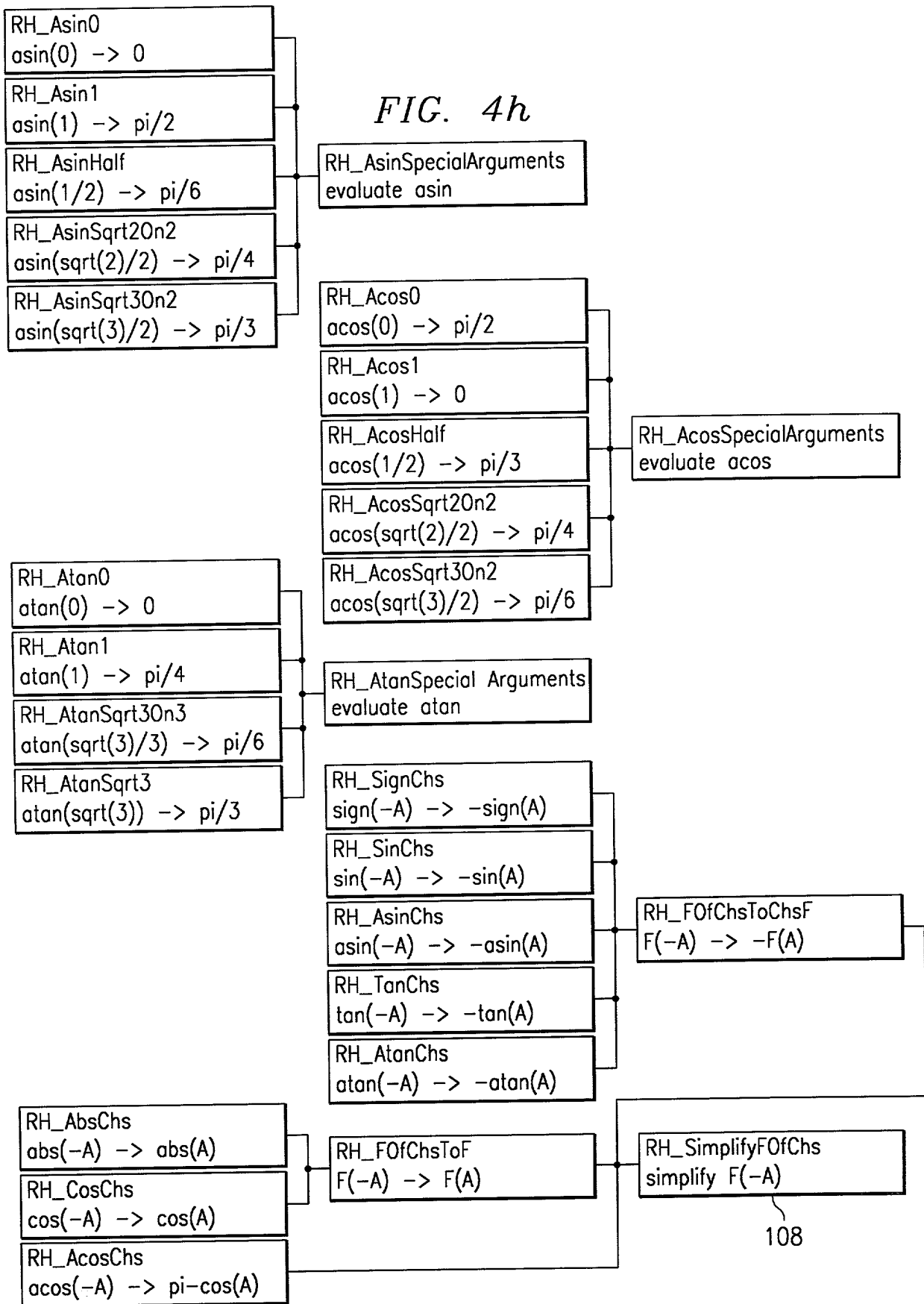
FIG. 4f





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FIG. 4h



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FIG. 4i

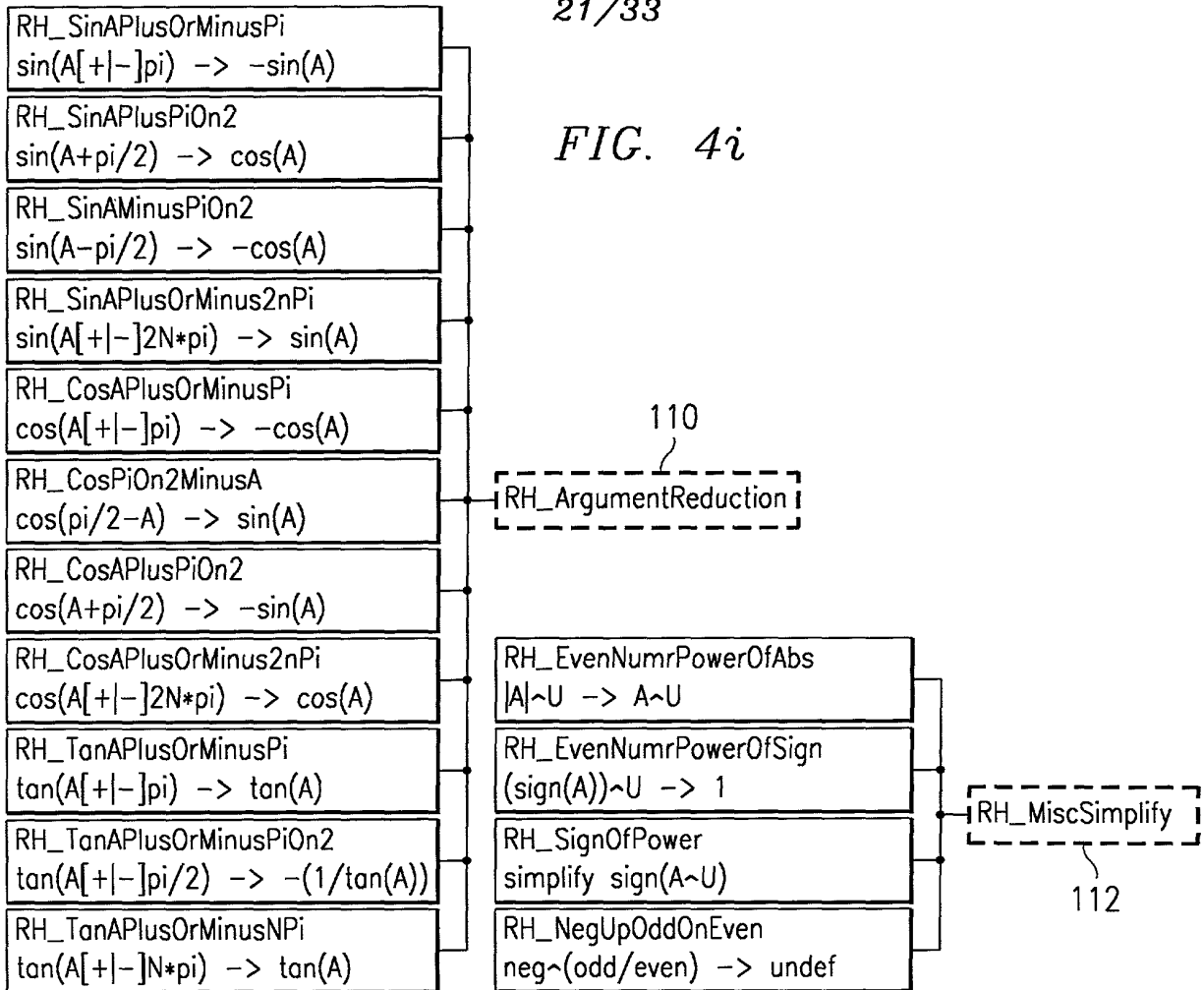
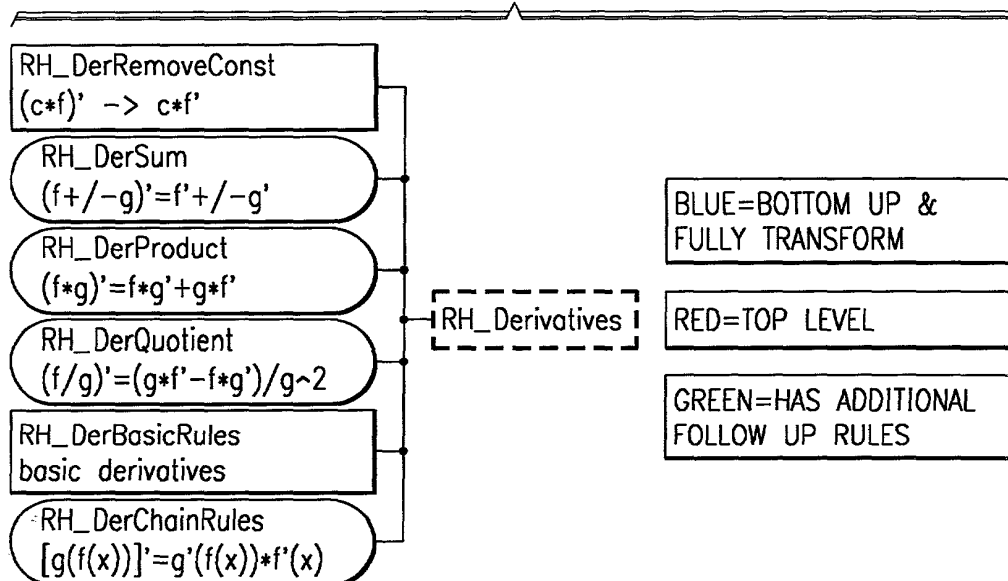


FIG. 4t



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FIG. 4j

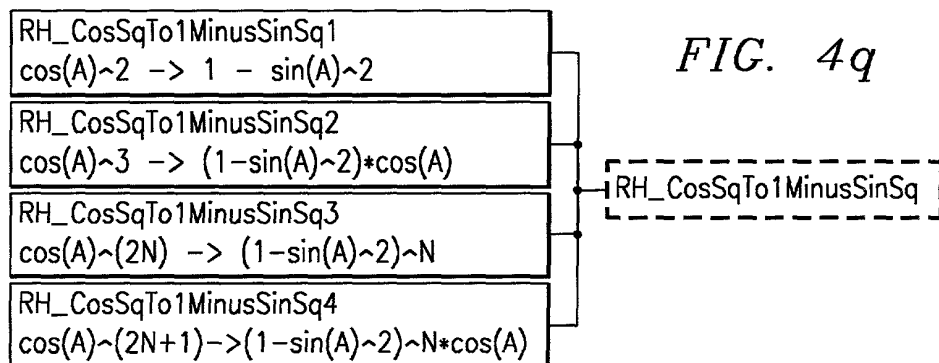
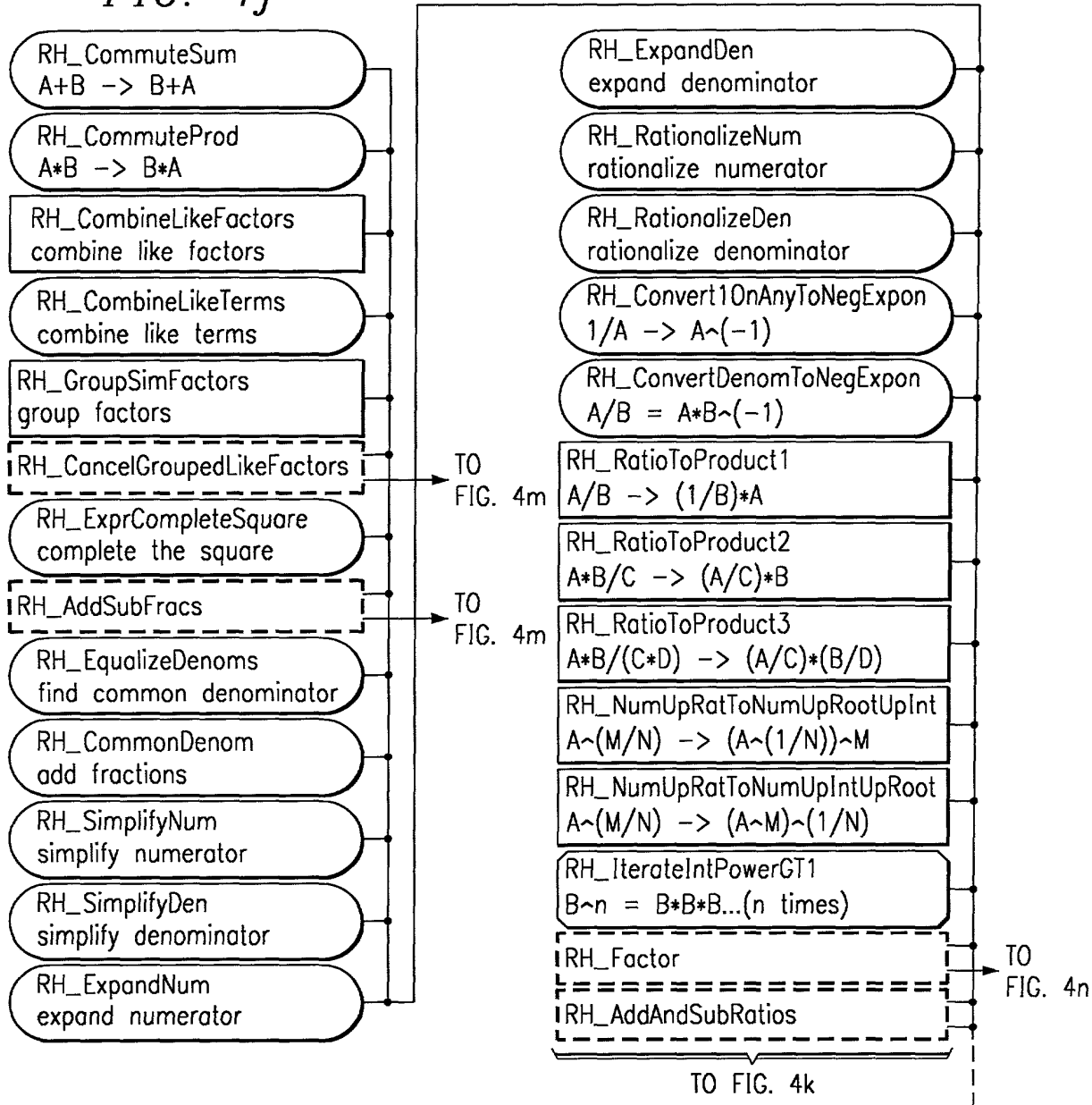
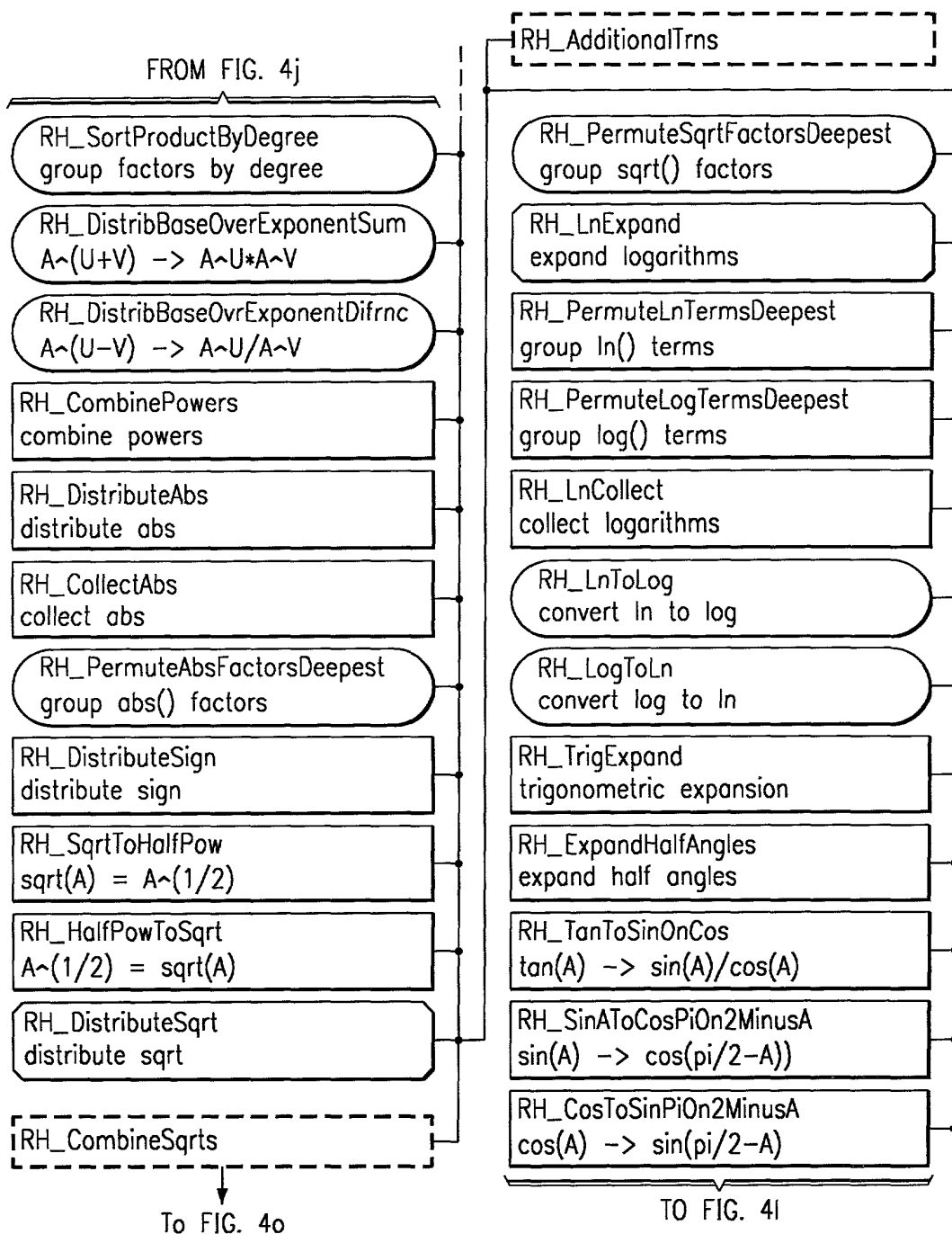


FIG. 4q

TO FIG. 41



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FROM FIG. 4l

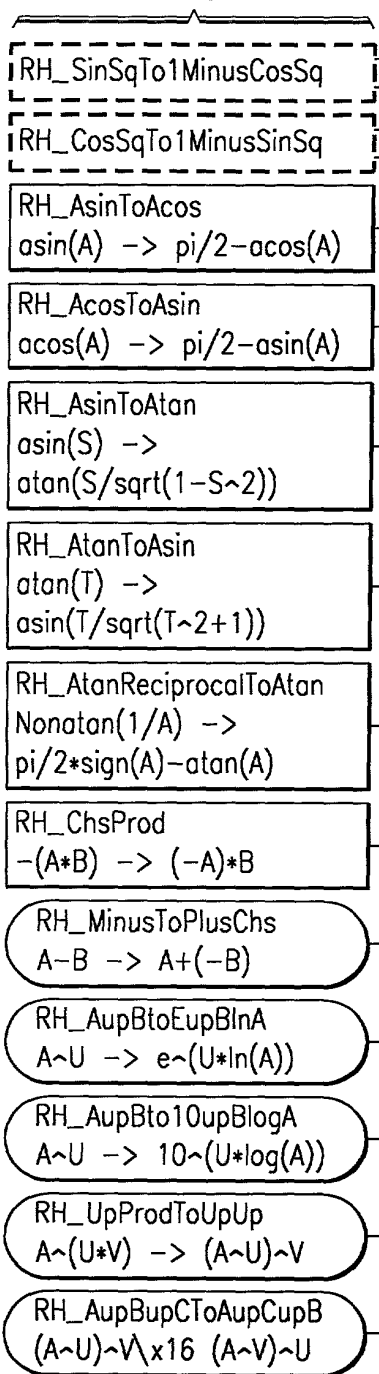


FIG. 4l

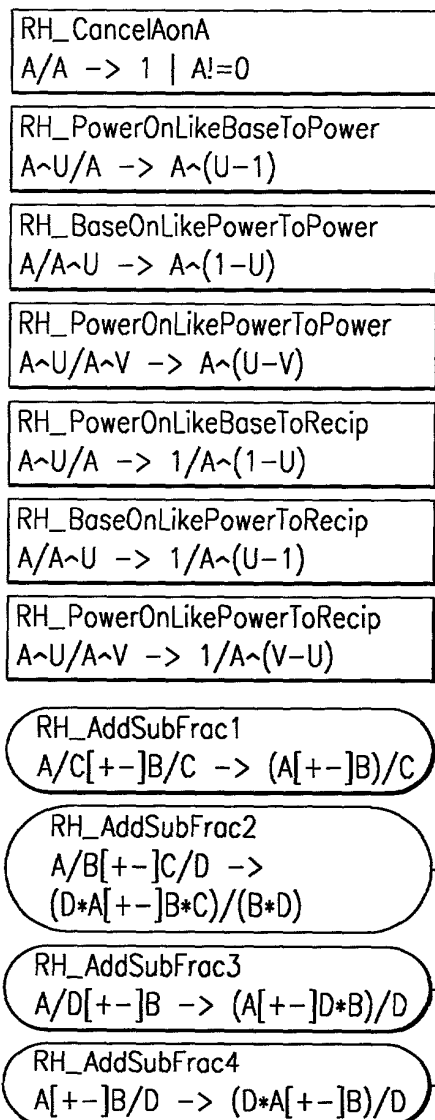
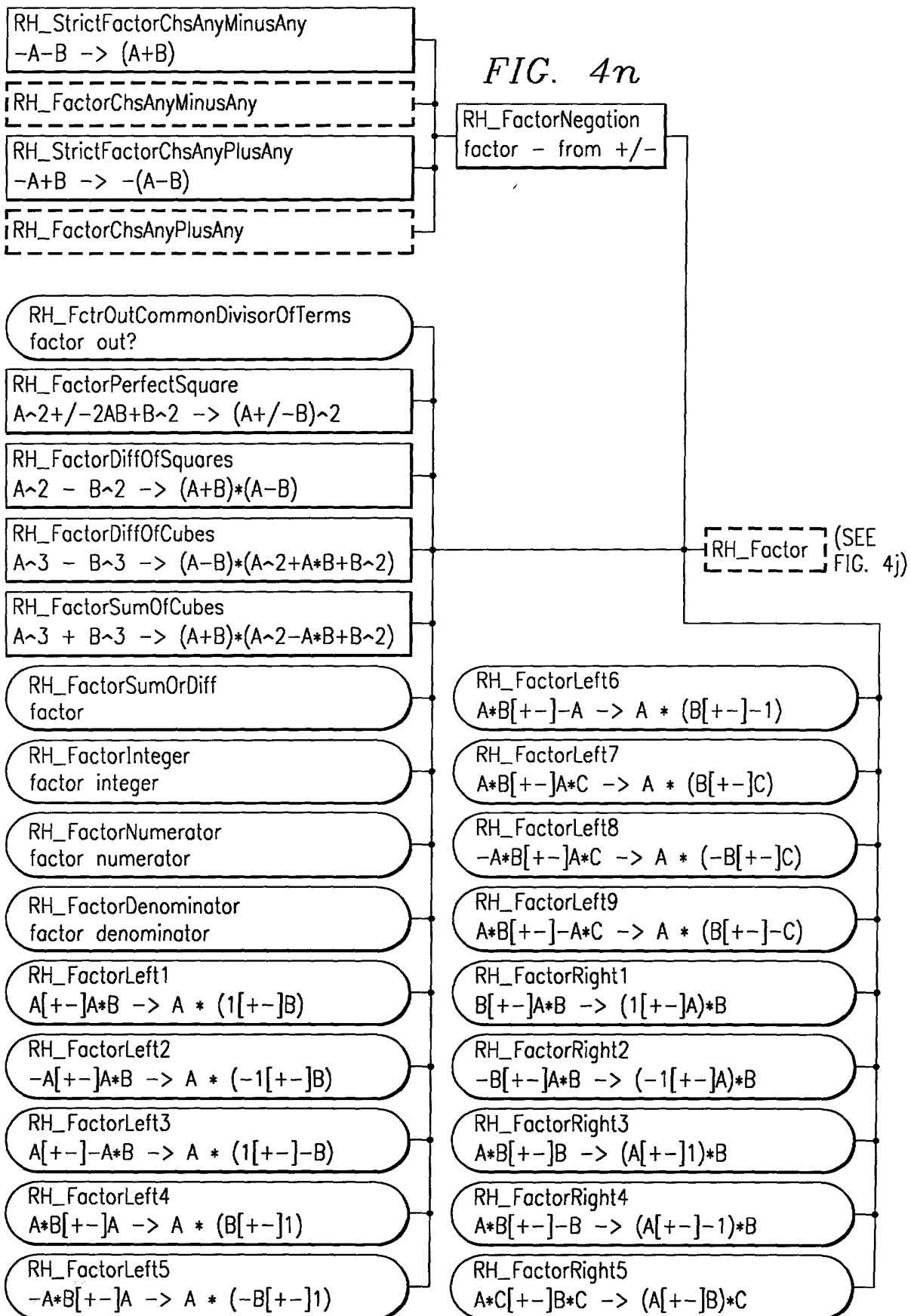


FIG. 4m



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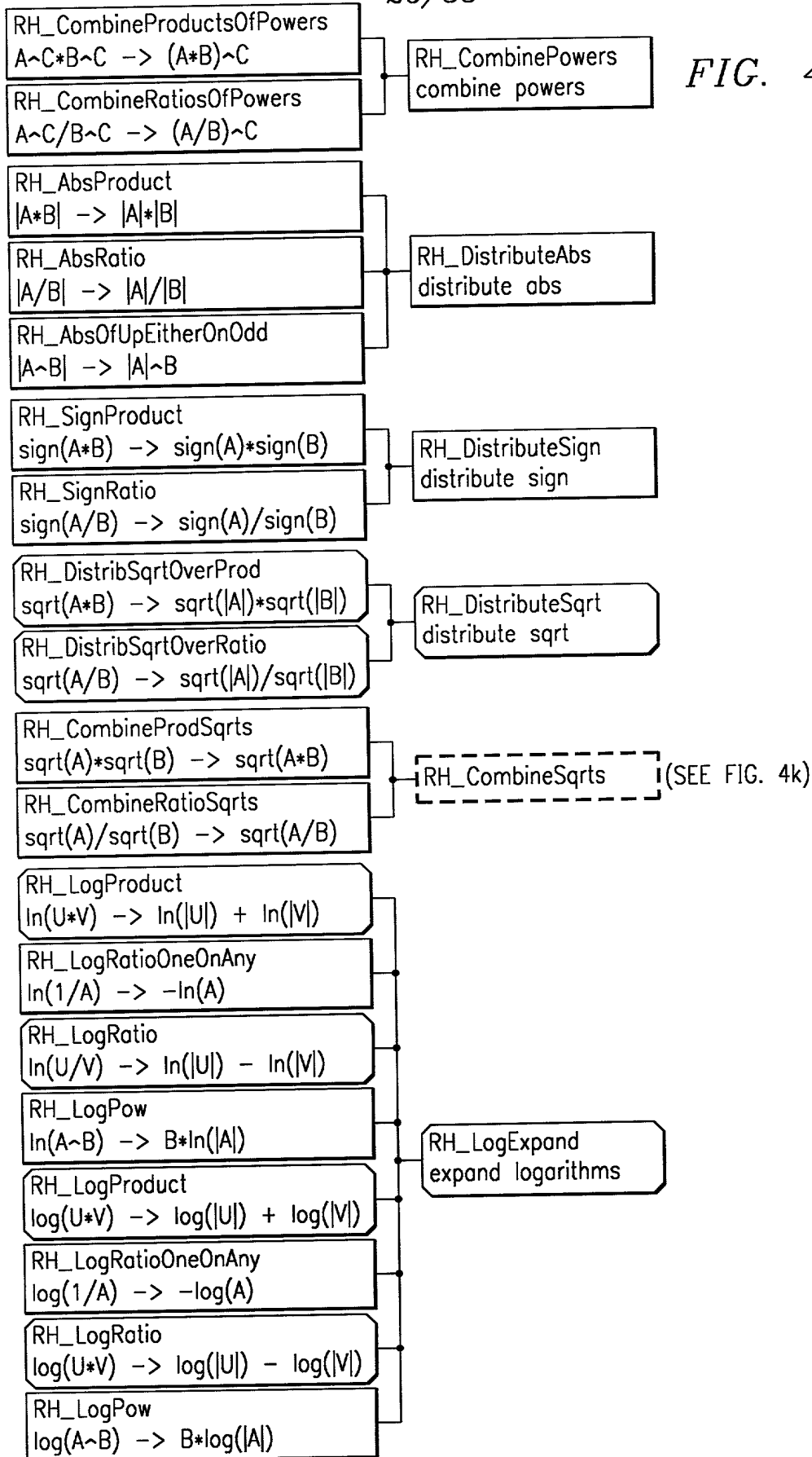


FIG. 4o

FIG. 4p

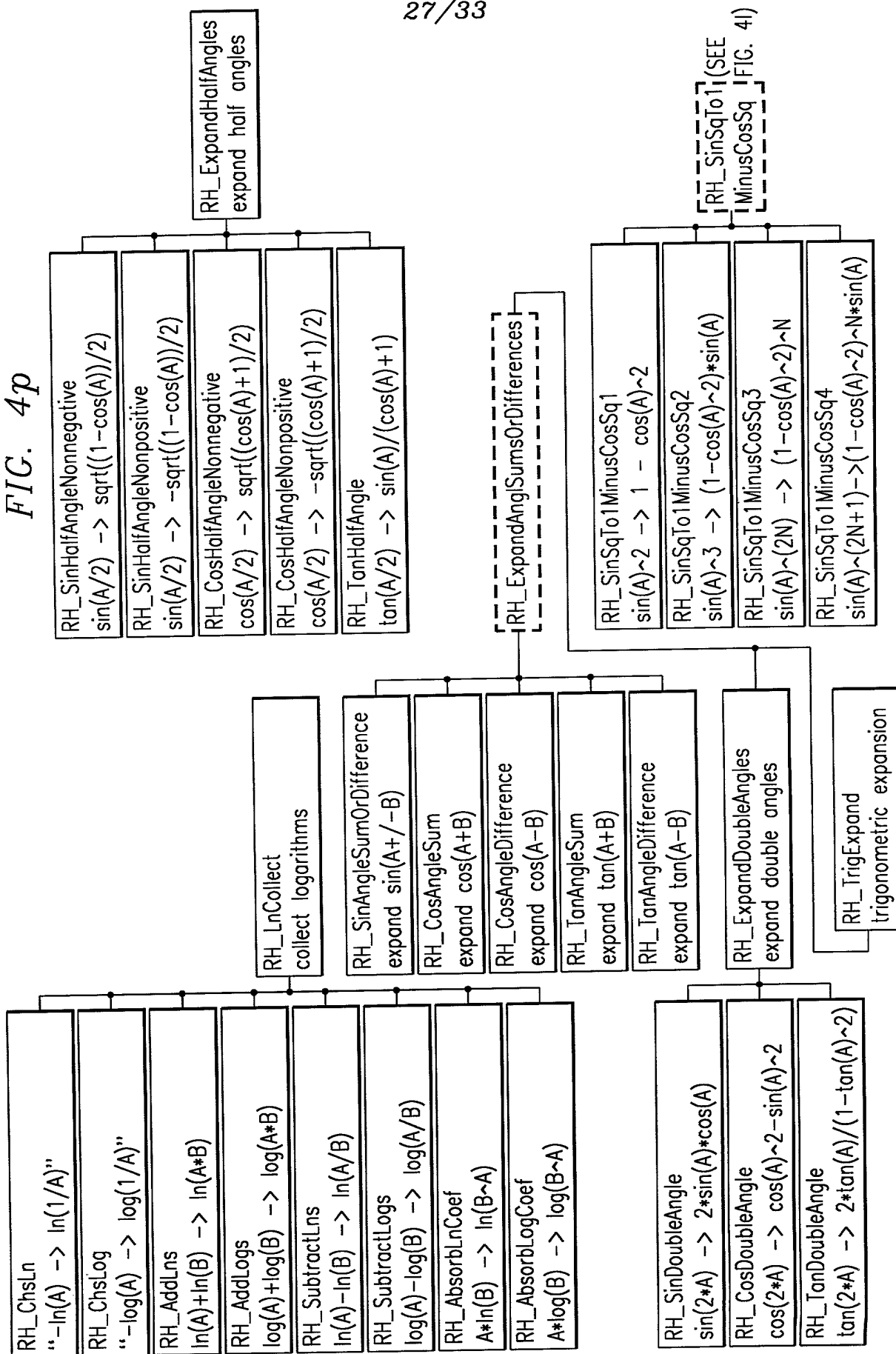


FIG. 4r

RH\_AddEachSide  
add ? to each side

RH\_SubEachSide  
subtract ? from each side

RH\_MulEachSide  
multiply each side by ?

RH\_DivEachSide  
divide each side by ?

RH\_SwitchSides  
switch sides

RH\_FactorLHS  
factor left-hand side

RH\_FactorRHS  
factor right-hand side

RH\_EqnZeroProductProperty  
 $A \cdot B = 0 \rightarrow A = 0 \text{ or } B = 0$

RH\_AnyOnAnyEqZero  
 $A/B = 0 \rightarrow A = 0 \mid B \neq 0$

RH\_Num1EqualNum2  
 $\text{Num1} = \text{Num2} \rightarrow \text{false}$

RH\_PosEqualNonPos  
 $\text{pos} = \text{nonpos} \rightarrow \text{false}$

RH\_NegEqualNonNeg  
 $\text{neg} = \text{nonneg} \rightarrow \text{false}$

RH\_AEqualA  
 $A = A \rightarrow \text{true}$

RH\_SameDenomBothSides  
 $A/D = B/D \rightarrow A = B \mid D \neq 0$

RH\_EqnArithForNonLinearEqns

RH\_EqnArithForLinearEqns

RH\_EqnLinear

RH\_OtherLinEqnTrans

RH\_SolveLinEqn  
solve linear equation

RH\_EqnAnyToPosEqZero  
 $A \wedge (\text{positive}) = 0 \rightarrow A = 0$

RH\_EqnSqrtTheorem  
take sqrt of each side

RH\_EqnCompleteSquare  
complete the square

RH\_EqnQuadraticFormula  
quadratic formula

RH\_EqnAbs1  
 $|A| = |B| \rightarrow A = B \text{ or } A = -B$

RH\_EqnAbs2  
 $|A| = B \rightarrow A = B \text{ or } A = -B$

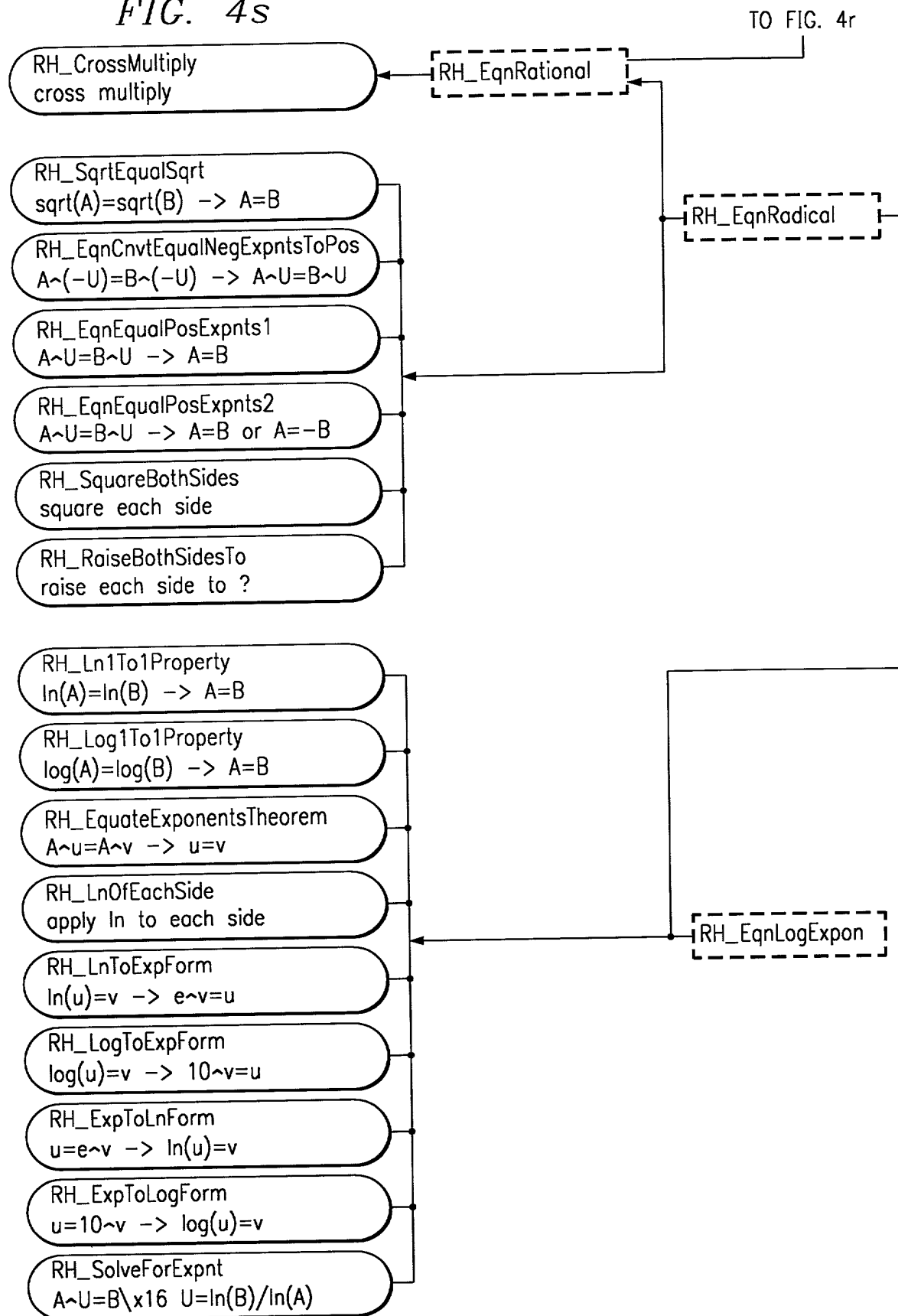
RH\_EqnAbs3  
 $A = |B| \rightarrow A = B \text{ or } A = -B$

RH\_EqnQuadratic

FROM  
FIG. 4s

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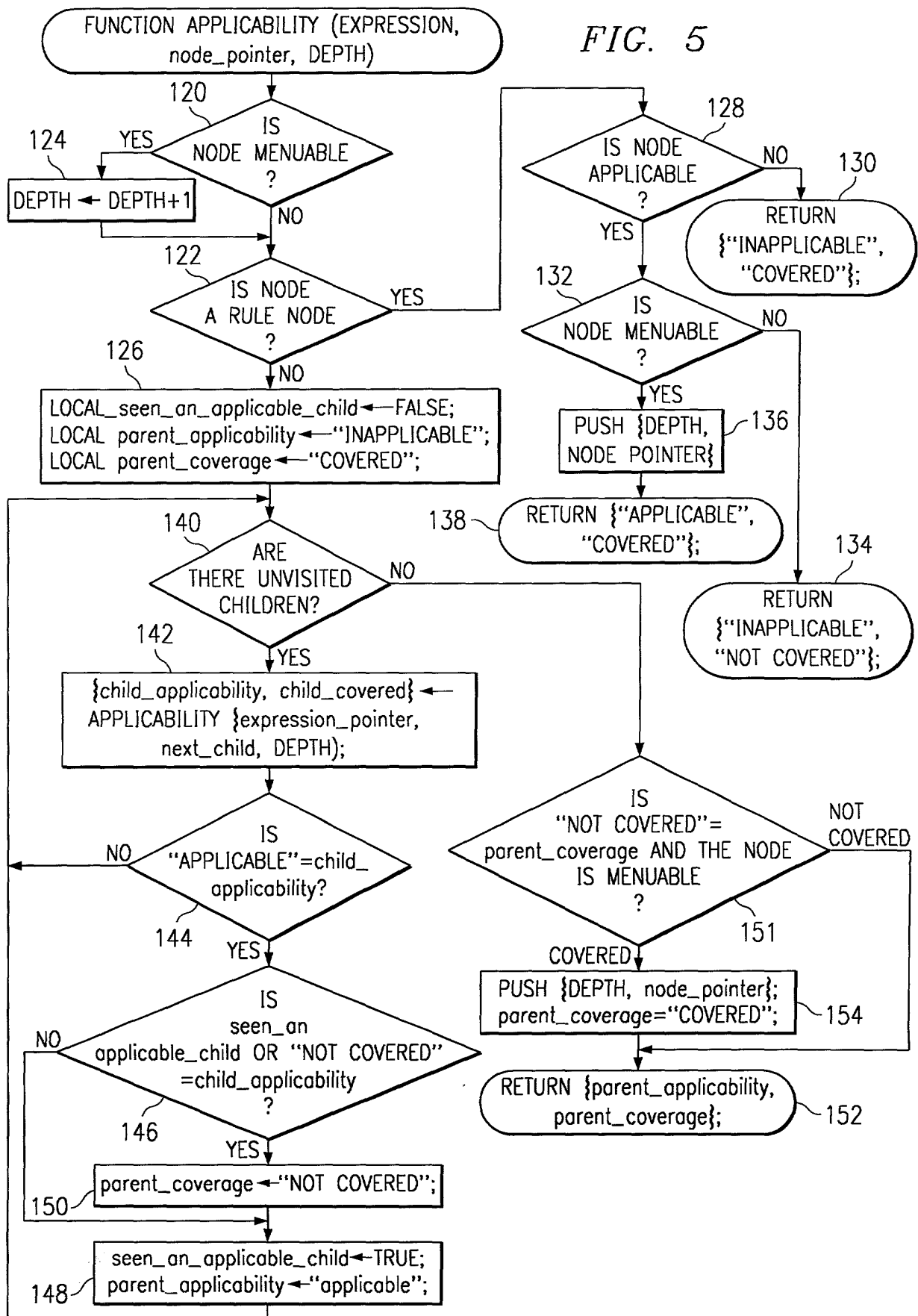
FIG. 4s



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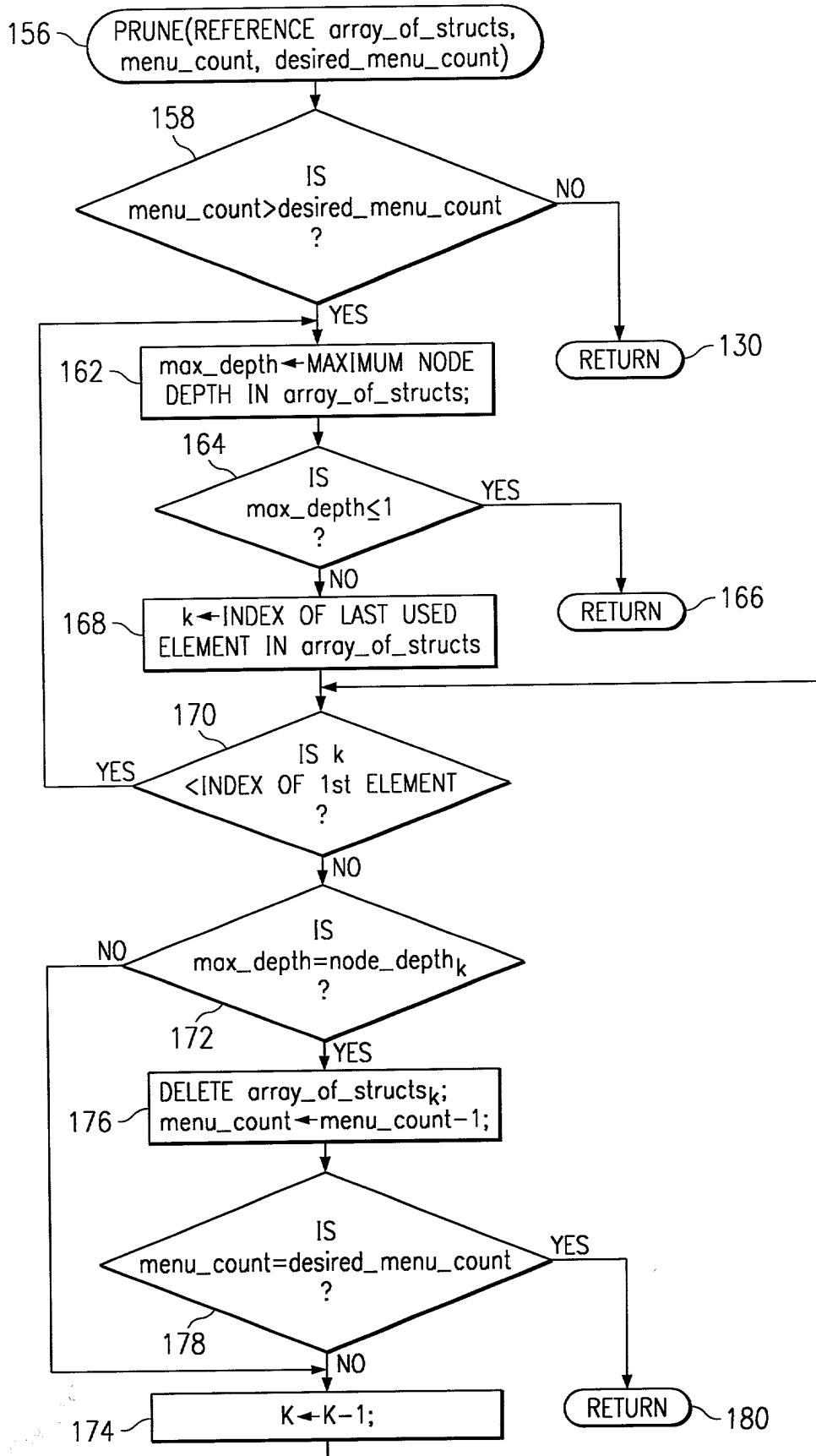
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FIG. 5



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FIG. 6



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FIG. 7

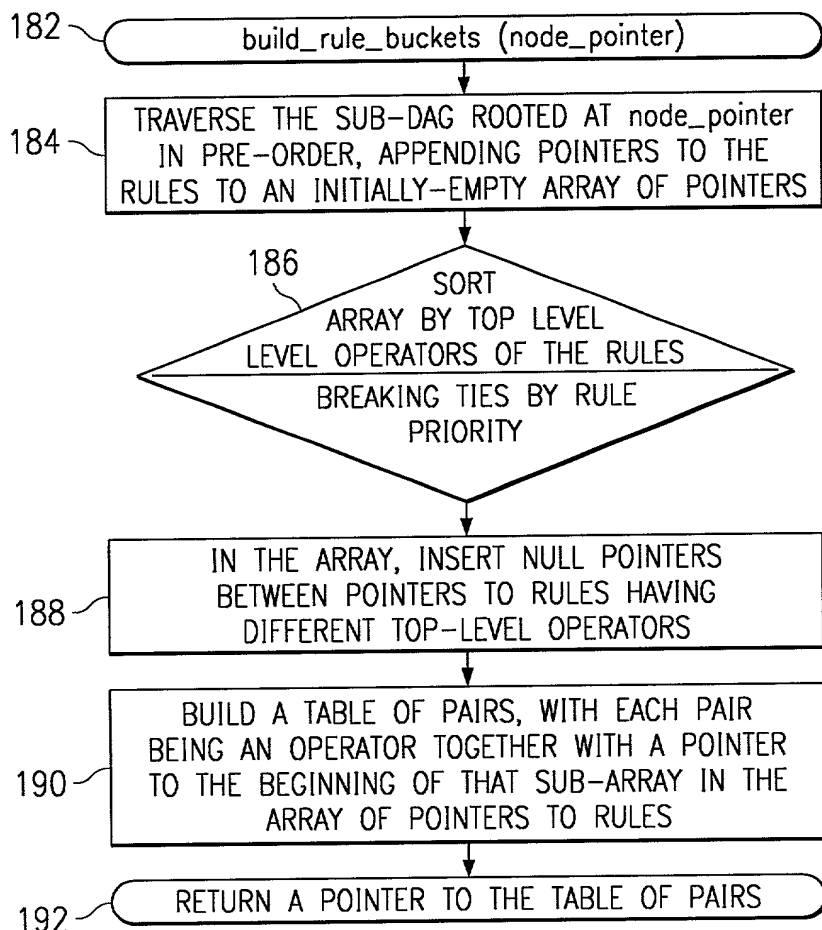
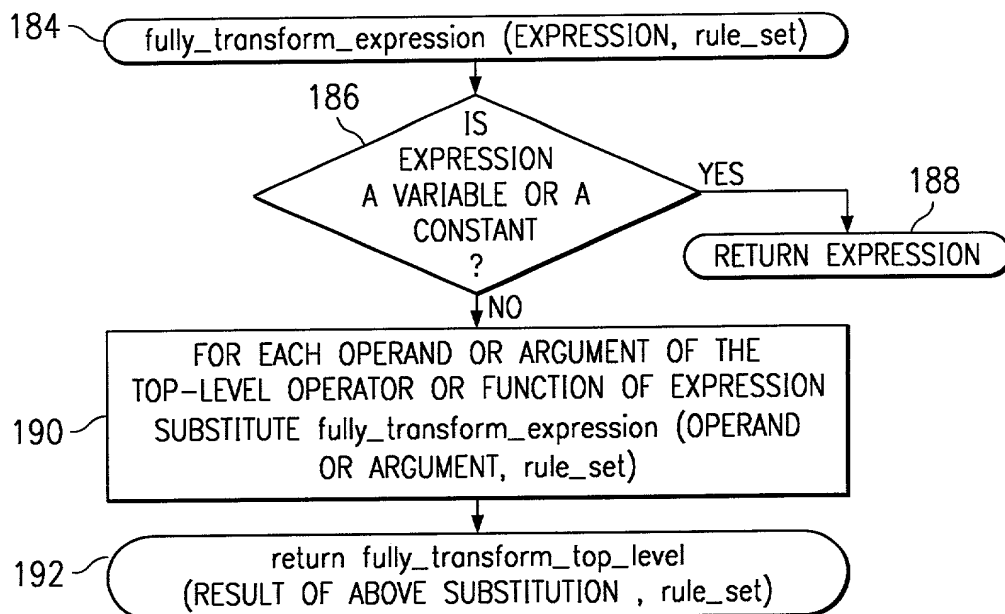


FIG. 8a





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FIG. 8b

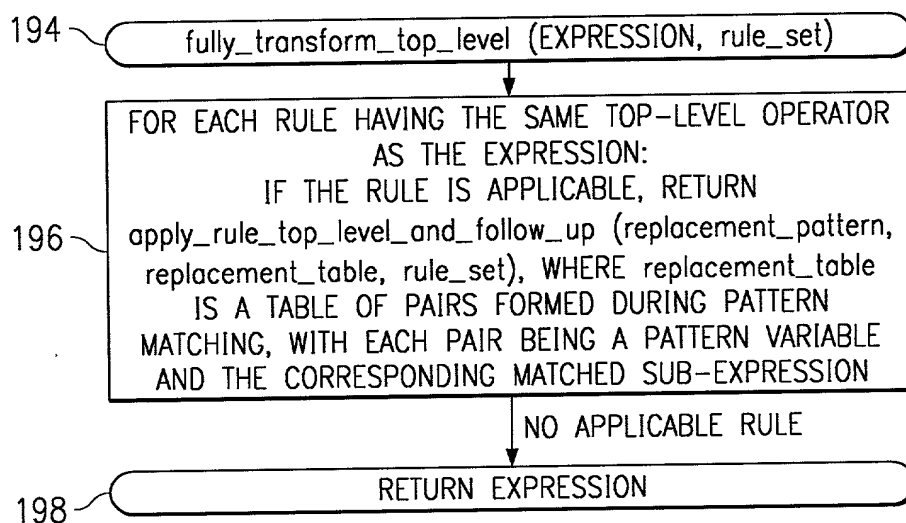


FIG. 8c

